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FULBRIGHT & JAWORSKI, LLP				
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EXAMINER				
SUAREZ, FELIX E				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/578,220

**Applicant(s)**

LAVAREC ET AL.

**Examiner**

FELIX E. SUAREZ

**Art Unit**

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 March 2007.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-21 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 05 March 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date 01 November 2006  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because:

In FIG. 1-5, blocks are not labeled.

Correction is required.

### ***Improper Multiple Dependent Claims***

2. Claims 4-9 and 13-21 objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claim has (have) not been further treated on the merits.

Claim 4; 5 is dependent from multiple dependent claim, 3 respectively.

Claim 6; 7; 8; 9 is dependent from multiple dependent claim, 3, 5; 3-6; 3-7; 3-8 respectively.

Claim 13; 14 is dependent from multiple dependent claim, 12 respectively.

Claim 15; 16; 17; 18; 19; 20 is dependent from multiple dependent claim, 14, 12; 12-15; 12-16; 12-17; 12-18; 12-19 respectively.

Claim 21 is dependent from multiple dependent claims 3-9.

### ***Minor Informalities***

3. The disclosure is objected to because of the following informalities:

In Claims 1 and 10, the "bullet symbol •" should be --deleted --.

In Claims 1-3 and 10-11, the "dash symbol -" should be --deleted --.

It is noted that the bullet and dash symbol has been used extensively within the claims. Applicant is required to delete all of them and check for accuracy.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 and 10-12 are rejected under 35 U.S.C. 102(b) as being unpatentable over Lee et al. (U.S. Patent No. 5,353,224).

With respect to claims 1 and 10, Lee et al. (hereafter Lee) teaches a process (or a system) employed to scan a complex surface which is delimited at least in part by a physical barrier and/or that has obstacles; where the said process includes the following stages:

(a) a stage for scanning, in a suitable manner, a first zone, of small dimensions and of appropriate shape, of the said complex surface (see col.1, lines 25-35, a position discriminating circuit for discriminating the present position of the cleaner represented in two-dimensional coordinates, that is, x-coordinate and y-coordinate, in every unit traveling distance),

where appropriate, detecting the said physical barrier and/or the said obstacles (see col. 1, lines 50-64, the known vacuum cleaner is provided with a motor driving part for driving motors, a plurality of obstacle sensors 42 each for sensing an obstacle which may be in the traveling paths of the cleaner),

traveling through successive relative positions (see col. 2, lines 63-65, the cleaner automatically and sequentially travels along a first column of the cleaning blocks which includes the position A), and

integrating the said relative positions (see col. 2, lines 65-68, a Central processing Unit CPU stores the cleaning blocks, on which blocks the cleaner has passed);

in such a manner that enables an absolute position to be established in the said first zone, enabling us to achieve an exhaustive scan of the said first zone; where the said process also includes:

(b) a stage for selecting a second zone of small dimensions and of appropriate shape, of the said complex surface (see col. 3, lines 1-10, the CPU 47 controls the cleaner 30 in order to sequentially travel along the next column), and for iterating the above stage (a) for this second zone (see col. 7, lines 33-46, in the practical cleaning step 63, the control device 12 divides the lateral distances of the integrated cleaning regions by any even number "n" in order to calculate a minimum even number "n" which is shorter than the width of the cleaner),

(c) a stage to iterate stage (b) as often as necessary in order to scan the whole of the complex surface (see col. 7, lines 37-46, calculate an overlapping value  $X = (W - 1/n)$  on the basis of the minimum even number "n" in order to efficiently clean the integrated cleaning regions).

With respect to claims 2 and 11, Lee further teaches, said process also includes:

(d) a stage for choosing the dimensions and the shape of each zone so that the error over the course of time, resulting from the integration of a series of relative positions, remains less than a specified threshold (see col. 12, lines 31-45, the lower end of the cleaning block B(1,1) is not coincide with the traveling path of the cleaning region as shown in FIG. 9A, the control device 12 increases the "l" value by adding 1, then, compares the "l" value with the total number  $m_j = 4$  of the lateral division lines in order to determine whether the "l" value is larger than or equal to the total number  $m_j = 4$ ).

With respect to claims 3 and 12, Lee further teaches that, in the case where a scan zone contains all or part of an obstacle, where the said process also includes the following stages:

stages for scanning the zone while remaining, as far as possible, within the zone concerned and following all or part of the contours of the obstacle in the zone (see col. 2, lines 22-32, as shown in FIG. 14, there is an obstacle X

disposed at the center portion of the rectangular cleaning region which is to be cleaned by the cleaner of FIG. 11. Here, the user first manipulates the manipulating part 33 in order to select a learning travel mode), and then a stage for selecting the next zone by applying travel rules (see col. 3, lines 1-10, the CPU 47 controls the cleaner 30 in order to sequentially travel along the next column).

### ***Conclusion***

#### ***Prior Art***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kobayashi et al. [U.S. Patent No. 5,284,522] describes a plurality of subdivided blocks from a zone to be cleaned.

Kim [U.S. Patent No. 5,440,216] describes a robot cleaner.

Nakamura et al. [U.S. Patent No. 5,696,675] describes a route making system for a mobile robot.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Felix Suarez, whose telephone number is (571) 272-2223. The examiner can normally be reached on weekdays from 8:30 a.m. to 5:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on (571) 272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 for regular communications and for After Final communications.  
November 4, 2008

/Felix E Suarez/  
Examiner, Art Unit 2857